

What is claimed is:

1. A method of transcoding information in a first markup language into a second markup language, the method comprising the steps of:

responding to a request to view a Web page by retrieving information from  
5 said Web page, wherein said information is in a first markup language;

normalizing said information;

determining a second markup language that can be used by a browser using  
device detection, wherein said browser is used by a computer that is to view said  
information; and

10 transcoding said information into said second markup language.

2. The method of claim 1, further comprising the step of sending said  
information in said second markup language to said computer.

3. The method of claim 2, wherein said computer is a wireless mobile device.

4. The method of claim 2, further comprising the step of streaming said  
15 information in said second language to said computer in real-time.

5. The method of claim 2 wherein the step of sending said information in said  
second markup language to said computer comprises sending said information to said  
computer using automatic page division.

6. The method of claim 1, wherein said step of transcoding comprises the  
20 steps of:

selecting a renderer that is associated with said second markup language  
from a plurality of renderers associated with markup languages;

sending said information through said renderer; and  
transcoding said information into said second markup language using said  
renderer.

7. The method of claim 1, further comprising the step of adding in real-time  
5 an additional renderer that is associated with a markup language that is different from the  
markup languages associated with said plurality of renderers.

8. The method of claim 1, wherein said step of normalizing comprises the step  
of transcoding said information in said first markup language into an intermediate markup  
language.

10 9. The method of claim 8, wherein said intermediate markup language  
comprises the EXtensible HyperText Markup Language ("XHTML").

10. The method of claim 1, wherein said second markup language comprises  
the EXtensible Markup Language (XML).

11. The method of claim 1, wherein said second markup language comprises  
15 the Wireless Markup Language (WML).

12. The method of claim 1, wherein said second markup language comprises  
the Compact HyperText Markup Language (cHTML).

13. The method of claim 1, wherein said second markup language comprises  
the Handheld Device Markup Language (HDML).

20 14. The method of claim 1, wherein said second markup language comprises  
the HyperText Markup Language (HTML).

15. The method of claim 1, wherein said steps of responding, normalizing, determining, and transcoding occur automatically.

16. The method of claim 1, wherein said first markup language comprises the HyperText Markup Language (HTML).

5 17. The method of claim 1, further comprising the step of sending said information in said second markup language to said computer over a system of networked computers.

18. The method of claim 1, wherein a first object embodies said information in said first markup language and said step of transcoding further comprises automatic object  
10 conversion of said first object to a second object embodying said information in said second markup language.

19. The method of claim 1, further comprising providing an error logging system.

20. The method of claim 1, wherein said second markup language is a markup  
15 language other than the HyperText Markup Language (HTML).

21. The method of claim 1, wherein said device detection comprises referring to an HTTP user agent header field.

22. The method of claim 1, wherein said device detection comprises detecting said browser and said computer using unique signature detection.

20 23. The method of claim 1, further comprising dividing said information in said second language into at least two pages using automatic page division.

24. A method of transcoding information in a first markup language into a second markup language, the method comprising the steps of:

responding to a request to view a Web page via a computer;

retrieving information from said Web page, wherein said information is in a

5 first markup language;

normalizing said information; and

transcoding said information into a second markup language, wherein said computer is adapted for utilizing said second markup language.

25. The method of claim 24, wherein said step of normalizing comprises the  
10 step of transcoding said information in said first markup language into an intermediate markup language.

26. The method of claim 24, wherein said computer is a wireless mobile device.

27. The method of claim 24, further comprising the step of streaming said  
15 information in said second language to said computer in real-time.

28. The method of claim 24, further comprising dividing said information in said second language into pages using automatic page division.

29. The method of claim 24, wherein said step of transcoding comprises the steps of:

20 determining said second markup language, wherein said computer is adapted for utilizing said second markup language;

selecting a renderer that is associated with said second markup language  
from a plurality of renderers associated with markup languages;

sending said information through said renderer; and

transcoding said information into said second markup language using said

5     renderer.

30.     The method of claim 29, further comprising the step of in real-time adding  
an additional renderer that is associated with a markup language that is different from the  
markup languages associated with said plurality of renderers.

31.     The method of claim 24, wherein said steps of responding, retrieving,  
10     normalizing, and transcoding occur automatically.

32.     The method of claim 24, wherein a first object embodies said information  
in said first markup language and said step of transcoding further comprises automatic  
object conversion of said first object to a second object embodying said information in  
said second markup language.

33.     The method of claim 24, further comprising providing an error log that  
15     reports errors that occur during at least one of said steps of responding, retrieving,  
normalizing, and transcoding.

34.     The method of claim 24, wherein said second markup language is a markup  
language other than the HyperText Markup Language (HTML).

20     35.     The method of claim 24, further comprising the steps of:  
detecting a browser of said computer; and

determining said second markup language that is used by said browser based on said step of detecting.

36. A method of transcoding information in a first markup language into a second markup language, the method comprising the steps of:

5                   responding to a request to view a Web page;  
                  retrieving information from said Web page, wherein said information is in a first markup language;

                  device detection to determine said second markup language that is used by said browser; and

10                  transcoding said information into a second markup language, wherein said computer is adapted for utilizing said second markup language.

37. The method of claim 36, wherein said computer is a wireless mobile device.

38. The method of claim 36, further comprising the step of streaming said  
15 information in said second language to said computer in real-time.

39. The method of claim 36, wherein said step of transcoding comprises the steps of:

                  selecting a renderer that is associated with said second markup language from a plurality of renderers associated with markup languages;

20                  sending said information through said renderer; and

                  transcoding said information into said second markup language using said renderer.

40. The method of claim 39, further comprising the step of adding in real-time an additional renderer.

41. The method of claim 36, wherein said steps of responding, retrieving, device detection and transcoding occur automatically.

5 42. The method of claim 36, further comprising dividing said information in said second language into pages using automatic page division.

43. The method of claim 36, wherein a first object embodies said information in said first markup language and said step of transcoding further comprises automatic object conversion of said first object to a second object embodying said information in  
10 said second markup language.

44. The method of claim 36, further comprising transcoding said information in said first markup language into an intermediate markup language prior to transcoding said information into second markup language.

45. A system for viewing a Web page by a computer that utilizes a markup  
15 language, the system comprising:

a computer, wherein said computer requests to view a Web page;

information from said Web page, wherein said information is in a first markup language;

a device detector, wherein said device detector determines a second markup  
20 language that said computer utilizes; and

a renderer, wherein said renderer transcodes said information into said second markup language, wherein said information is sent to said computer.

46. The system of claim 45, further comprising:

a normalizer, wherein said normalizer transcodes said information in said first markup language into an intermediate markup language.

47. The system of claim 45, further comprising a plurality of renderers and  
5 each of said plurality of renderers transcodes said information into a different markup language, wherein said renderer is selected from said plurality of renderers in real-time.

48. The system of claim 47, further comprising an additional renderer that is added in real-time.

49. The system of claim 45, wherein said computer utilizes a markup language  
10 other than the HyperText Markup Language (HTML).

50. The system of claim 45, wherein said computer is a wireless mobile device.

51. The system of claim 50, further comprising the step of streaming said information in said second language to said wireless mobile device in real-time.

52. The system of claim 45, wherein said renderer transcodes said information  
15 into said second markup language in real-time.

53. The system of claim 45, wherein said information in said second markup language is sent to said computer over a system of networked computers.

54. The system of claim 45, wherein a first object embodies said information in said first markup language and said renderer uses automatic object conversion to convert  
20 said first object to a second object embodying said information in said second markup language.

55. The system of claim 45, further comprising an error logging system.



56. The system of claim 45, wherein said second markup language is a markup language other than the HyperText Markup Language (HTML).

57. The system of claim 45, wherein said device detector uses unique signature detection.

5 58. A system for viewing a Web page by a computer that utilizes a markup language other than the HyperText Markup Language (HTML), the system comprising:

a computer, wherein said computer requests to view a Web page;

information from said Web page, wherein said information is in a first markup language;

10 a normalizer, wherein said normalizer normalizes said information in said first markup language into an intermediate markup language; and

a renderer, wherein said renderer transcodes said information in said intermediate markup language into a second markup language, wherein said second markup language is a markup language that said computer utilizes and said second markup language is a markup language other than HTML.

15 59. The system of claim 58, further comprising:

a device detector, wherein said device detector determines said second markup language based on a browser of said computer.

60. The system of claim 58, wherein said computer is a wireless mobile device.

20 61. The system of claim 58, wherein a first object embodies said information in said first markup language and said renderer uses automatic object conversion to convert

said first object to a second object embodying said information in said second markup language.

62. Computer executable process steps operative to control a computer, stored on a computer readable medium, comprising:

- 5                   a plurality of steps to receive data required for subsequent calculations; and  
                  a plurality of steps to automatically transcode information in a first markup language into a second markup language, wherein said second markup language is automatically determined.

63. The steps of claim 62, further comprising a step to automatically normalize  
10 said information in said first markup language prior to transcoding said information into said second markup language.

64. A method of transcoding information in a first markup language into a second markup language, the method comprising the steps of:

- (a) responding to a request to view a Web page;
- 15           (b) automatically retrieving information from said Web page, wherein said information is in a first markup language;
- (c) automatically transcoding said information in said first markup language into an intermediate markup language;
- (d) automatically detecting a browser used by a wireless mobile device that is  
20 to view said information;
- (e) automatically determining a second markup language, wherein said second markup language is a markup language different from the first markup language and

wherein said browser of said wireless mobile device is adapted for utilizing said second markup language;

(f) automatically selecting a renderer that is associated with said second markup language from a plurality of renderers;

5 (g) automatically sending said information in said intermediate language through said renderer, wherein said renderer converts said information into said second markup language using smart automatic object conversion; and

(h) automatically streaming said information in said second markup language to said wireless mobile device in real-time over a system of networked computers.

10 65. The method of claim 64, further comprising adding in real-time an additional renderer.

66. The method of claim 64, further comprising dividing said information in said second language into pages using automatic page division.

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